

Claims

1. An LED comprising:

a substrate;

5 a first nitride gallium layer disposed above the substrate;

a first electrode provided at one portion of and above the first nitride gallium layer;

10 an active layer provided at the other portion of and above the first nitride gallium layer, for emitting light;

a second nitride gallium layer provided above the active layer; and

transparent electrodes spaced apart from one another above the second nitride gallium layer.

15 2. The LED according to claim 1, wherein the transparent electrodes have stripe shapes spaced apart from one another.

20 3. The LED according to claim 1, wherein the transparent electrode are disposed at a whole region excepting contact portion regions of the electrode.

25 4. The LED according to claim 1, further comprising: a third nitride gallium layer formed above the second nitride gallium layer.

30 5. An LED having a first nitride gallium layer, an active layer, a second nitride gallium layer, a first electrode, and a second electrode above a sapphire substrate, the diode comprising:

a plurality of transparent electrodes respectively provided at a plurality of partitioned regions excepting regions of the first electrode and the second electrode

disposed at an upper layer; and

a plurality of connection units for electrically connecting the plurality of transparent electrodes with the second electrode.

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6. The LED according to claim 5, wherein the first electrode is disposed along a circumference of an upper edge of the diode.

10 7. The LED according to claim 5, wherein the connection unit are metal films.

8. The LED according to claim 5, wherein the connection units have resistances different from one another.

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9. The LED according to claim 5, wherein the edges of the plurality of transparent electrodes, which are electrically connected with the connection units, have the same thicknesses as the second electrode.

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10. The LED according to claim 5, wherein the plurality of transparent electrodes is disposed to space apart from one another along an upper edge of the light emitting diode at which the first electrode is disposed.

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11. The LED according to claim 5, wherein at least one transparent electrode is provided such that a pair of transparent electrodes faces with each other.

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12. The LED according to claim 5, wherein the plurality of transparent electrodes is disposed at an adjacent region to the first electrode to have a step shape.

13. The LED according to claim 5, wherein the

connection unit is formed above the second nitride gallium layer to have a concavo-convex shape.

14. The LED according to claim 5, further comprising:
5 a third nitride gallium layer formed above the second nitride gallium layer.

15. A method of fabricating an LED, the method comprising the steps of:

10 forming a stripe-shaped transparent electrode pattern using a stripe-shaped mask above a nitride gallium layer;
depositing a transparent electrode above the stripe-shaped transparent electrode pattern; and
15 etching-out the stripe-shaped transparent electrode pattern to form a stripe-shaped transparent electrode.

16. The method according to claim 15, wherein the stripe-shaped transparent electrode pattern is formed of SiO₂-based material.

17. A method of fabricating an LED, the method comprising the steps of:

20 depositing a transparent electrode film above a nitride gallium layer, and coating a photoresist film above the transparent electrode film;

25 exposing and developing the photoresist film by using a slit-shaped mask above the photoresist film, to form a stripe-shaped photoresist pattern; and

30 etching the transparent electrode film along the stripe-shaped photoresist pattern to form a stripe-shaped transparent electrode.

18. An LED comprising:
a substrate;

a first nitride gallium layer formed above the substrate;

an active layer formed above the second nitride gallium layer;

5 a second nitride gallium layer formed above the active layer;

a first electrode formed above the first nitride gallium layer;

10 a second electrode formed above the second nitride gallium layer; and

a plurality of transparent electrodes spaced apart from one another above the second nitride gallium layer.

15 19. The LED according to claim 18, further comprising: an electrical connection unit for connecting the transparent electrode with the second electrode.

20 20. The LED according to claim 18, wherein the transparent electrodes are provided at least three.

21. The LED according to claim 18, wherein the transparent electrodes have stripe shapes.